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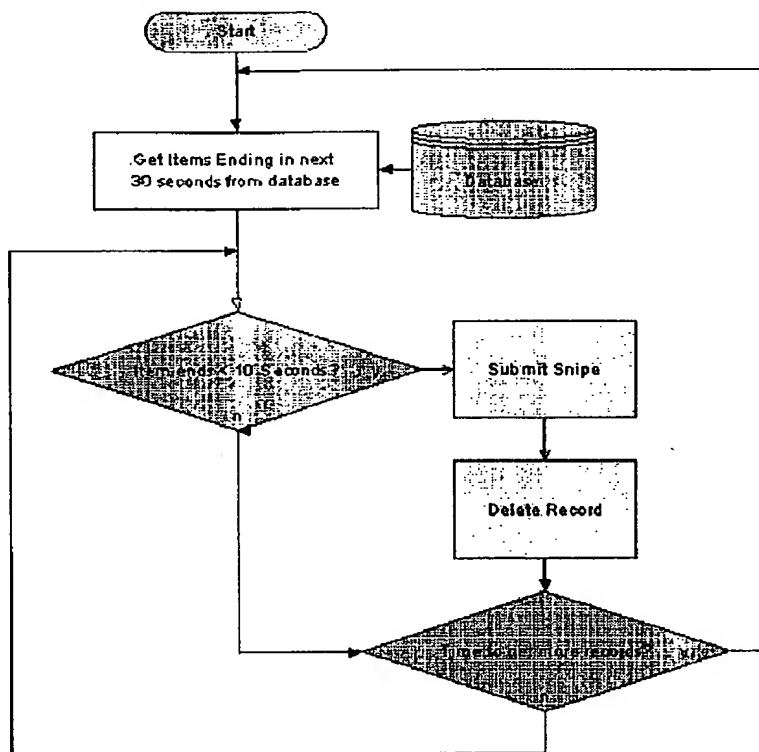
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(54) Title: METHOD AND APPARATUS FOR AUTOMATED MANAGEMENT OF ON-LINE AUCTIONS

### Automatic Sniping



(57) Abrégé/Abstract:

Current proxy bidding methods on Internet auction sites do not permit "sniping". The present invention provides an automated Internet auction management system which permits "sniping".

**METHOD AND APPARATUS FOR AUTOMATED MANAGEMENT  
OF ON-LINE AUCTIONS**

**Abstract of the Disclosure**

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Current proxy bidding methods on Internet auction sites do not permit "sniping". The present invention provides an automated internet auction management system which permits "sniping".

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**METHOD AND APPARATUS FOR AUTOMATED MANAGEMENT  
OF ON-LINE AUCTIONS**

**Technical Field**

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The invention relates to Internet-based auctions, and more particularly to a system and apparatus for automatically placing bids for the purchase of goods and services over the Internet.

10 

**Background Art**

Internet-based auctions have become an important means for selling goods and services. Some of the more popular auction sites are www.eBay.com, www.bid.com and www.yahoo.com. These sites permit different types of on-line auctions, such as  
15 Reserve Price Auction, Private Auction, Dutch Auction, Restricted Access Auction or Reverse Auction. For example, US patent no. 5,835,896 discloses a method of conducting an auction over the Internet. US patent no. 5,890,138 discloses a reverse auction method conducted over the Internet. US patent no. 6,023,686 discloses a method of conducting an auction over the Internet using bid pooling.

20 According to the standard Internet auction system where the article is awarded to the highest bidder, bidders access the auction web site and for a given article are able to determine the time and date of the auction completion, and the current highest bid. Unlike live auctions, where the lack of a higher bid will cause the auction to be quickly terminated, on Internet auctions there is generally a preset duration for the  
25 auction period, typically 1 to 7 days, so there is generally a flurry of activity in the waning minutes of the auction session as bidders try to narrowly outbid the last highest bidder. There is a benefit to be able to send in the last bid at the last possible time in that the last bidder can narrowly outbid the previous high bidder. Consequently bidders will attempt to time their last bid to be received just prior to the expiry of the auction.  
30 This practice is called "sniping". "Sniping" both increases the sniper's chances of winning the item and keeps the final cost down because there will not be enough time

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remaining for another bid to be placed. While most seasoned bidders wait until the last 8 or 10 seconds before an auction is ending and then submit their bid ("sniping"), most sites however require 3 or 4 steps in order to accept a bid which can take up to one minute depending on the time of day, Internet traffic and the speed of the bidder's connection.

Sites such as eBay.com offer what is called "proxy bidding" to permit bidders to have their bids submitted automatically. The user submits the maximum bid he/she is willing to bid. The system will then automatically outbid the current highest bidder by a pre-determined increment (which depends on the value of the bid) until the bidder's maximum is reached or the auction concludes. If there are two proxied bids competing for the same item, the bid will automatically increase to the lower maximum bid. Proxy bids are submitted immediately upon a higher bid being submitted and so do not allow for "sniping". Also, a sniper will defeat a proxy bid due to the time required for the web site to process the sniper's bid and search for proxy bids.

There is therefore a need for an automated system for permitting a bidder to automatically submit a bid at the optimum time.

#### Disclosure of Invention

The present invention provides a method of automatically managing on-line auctions comprising: a) providing an auction management web site accessible to users on the Internet via a plurality of client computer terminals and comprising a secure server, the secure server being adapted to maintain a database, monitor auction web sites; b) providing means for the user to provide to the auction management web site i) the target Internet auction site; ii) the user's username and password for the target site; iii) target item identification; iv) user's maximum bid for the target; c) the auction management web site monitoring the target auction site to determine the response time of the target site and the current high bid for the target item; d) if the current highest bid is within the customer's acceptable price range, periodically calculating the remaining time

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of the auction for the target item; and e) if the remaining time of the auction for the target item ends within a predetermined period, placing a bid for the target item at a predetermined level above the current bid and equal to or less than the maximum bid.

## 5 Brief Description of Drawings

In drawings which disclose a preferred embodiment of the invention,

Fig. 1 is a block diagram illustrating a computer network for carrying out the invention; and

10 Fig. 2A through 2E are flowcharts illustrating the method of the invention.

## Best Mode(s) For Carrying Out the Invention

15 With reference to Figure 1, a number of users have access to the Internet network 10 via remote client computer terminals 12 using Bid Blaster™ application software, which includes embedded Internet browser software. The Bid Blaster™ web site 14, consisting of a Bid Blaster™ web server 16, comprising web server 18 accessible to the Internet and secure server 20 including software and Bid Blaster™ database storage  
20 etc. and which is protected from the Internet access by firewall 22. A user at terminal 12 accesses the web site 14 by running the Bid Blaster™ application software and pointing his or her browser at the web site URL, e.g. bidblaster.net. Firewall 22 reduces the possibility that hackers can access the Bidblaster server to modify or intercept the signal, or alter account information. Auction web site 24 is also accessible over Internet  
25 10.

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**A. Bid Blaster™ Database**

The Bid Blaster™ database resides on Bid Blaster™ secure server 20. It stores the following data.

5

**1) Items Table - Records of all Auction Items that clients are monitoring**

Each record contains:

Auction Site ID # (Index into the Auction Site Table)

Item ID #

10

*(The Auction Site ID # and Item ID # must be combined to select record)*

Seller ID # (Index into the Sellers Table)

Description

Current Bid

Minimum Bid

15

Increment

Start Date

End Date

Quantity

High Bidder

20

BidKey

*(Items records are deleted after the auction has been closed for more than 48 hours)*

**2) Snipes Table - Records of all pending snipes**

25

Each record contains:

Unique Snipe ID # (Primary Key)

Auction Site ID # (Index into Items Table)

Item ID # (Index into Items Table)

Sniper ID # (Index into Snipers Table)

- 5 -

**End Date**

*(The End Date field is duplicated here from the corresponding Item in the Items Table for performance reasons in order to prevent a Table Join in the Automated Snipe Manager when it is querying this table for Snipes.)*

5                   Username  
                       Password  
                       Maximum Bid Amount  
                       Quantity  
                       *(Snipe records are deleted after the auction has closed)*  
 10                   *(There can be no duplicate records)*

**3) Contacts Table - Records of contact information for sellers and snipers**

Each record contains:

                      Unique ID # (Primary Key)  
 15                   First name  
                       Last name  
                       Home Phone #  
                       Work Phone #  
                       Address 1  
 20                   Address 2  
                       City  
                       Country ID # (Index into Countries Table)  
                       Postal Code  
                       E-Mail address  
 25                   Bid Blaster™ Username  
                       Bid Blaster™ Password  
                       *(There can be no duplicate records)*

**4) Sellers' Table - Records of item sellers from auction sites**

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Each record contains:

5            Seller ID #  
              Auction ID # (Index into Auction Site Table)  
              *(The Auction Site ID # and Seller ID # must be combined to select record)*  
              Contact ID # (Index into Contacts Table)  
              Username

**5) Snipers' Table - Records of all clients using the Client Item Manager**

Each record contains:

10           Unique Sniper ID # (Primary Key)  
              Contact ID # (Index into the Contacts Table)  
              Serial Code  
              Registration Code  
              Daily Key Code  
 15           Last Known IP Address  
              Successful Snipes  
              Failed Snipes  
              Listed (true/false)  
              *(There can be no duplicate records)*

20

**6) Shipping Table - Records of all items to be shipped**

Each record contains:

25           Unique Invoice ID # (Primary Key)  
              Seller ID # (Index into the Sellers Table)  
              Buyer ID # (Index to Sniper Table to the Unique Sniper ID#)  
              Auction ID # (Index to the Items Table)  
              Item ID # (Index to Items Table)  
              Purchase Cost  
              Applicable Taxes



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*(There can be no duplicate records)*

**7) Auction Sites Table - Records of currently supported auction sites**

Each record contains:

- 5                    Unique Site ID # (Primary Key)  
                    Title  
                    URL  
                    Greenwich Mean Time ("GMT") Offset  
                    Supports Sniping (true/false)  
10                   *(There can be no duplicate records)*

**8) Stats Table - Records of bidding and clients**

                    Successful Snipes (This figure, totalled for all Snipers, will be displayed  
on the user's interface for promotional purposes).

- 15                   Failed Snipes (Used for internal purposes)  
                    Total Clients (Total of all records in Snipers Table)  
                    *(There can be no duplicate records)*

**9) Countries Table - Records of all country names**

- 20                   Unique ID # (Primary Key)  
                    Name  
                    *(There can be no duplicate records)*

**B. Client Item Manager**

- 25                   This application (see Fig. 2A) executes on a client computer 12. It  
contains 3 main components:

- 1) Web Browser;
  - 2) Item Explorer; and
-

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3) Built in text/video/audio chat for use with other Bid Blaster™ clients and servers.

#### Web Browser

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The Bid Blaster™ application software embeds a web browser such as Microsoft's Internet Explorer™ so users can view items up for auction on Internet auction sites ("items"). When an auction item is displayed in the web browser, the user has the option to add the item to their local item list. Clicking the Add button sends a  
10 TCP/IP request through the Internet to the Bid Blaster™ Server to retrieve the properties of the selected item and return them. Username and Password fields are automatically filled out for each site.

#### Item Explorer

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This section has 3 components:

- a) Auction Site Hierarchy - Lists all supported Internet Auction sites. Each Auction site is divided up into four sections, Config, Open, Closed, and Won. The local time of the selected Auction Site will be displayed in the status bar of  
20 the Interface. When the site is highlighted, the user can type in their respective username, password and code for the site. The totals of sites open, closed, and won items will be displayed.
  - b) Item List - Displays all items and their properties in the selected Open, Closed, or Won section of the parent auction site. This list may be sorted by any item  
25 property an ascending or descending order.
  - c) Snipe Setup - Allows users to configure a snipe. If an Open List is selected in the Auction Site Hierarchy, the topmost selected item in the list will appear in the snipe setup. To configure a snipe, a user must set their Username and Password for the auction site and the Quantity and Maximum Bid for the Item.
-

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Then click the "Submit" button to send the snipe configuration to a Bid Blaster™ Server for validation. (see Fig. 2D)

The Item Explorer performs automatic item updates at the following  
5 intervals:

- a) if auction time remaining > 1 hour then update once per hour
- b) if auction time remaining < 1 hour and > 15 minutes then update every 15  
minutes
- c) if auction time remaining < 5 minutes and > 1 minute then update every 2  
10 minutes
- d) if auction has ended then update and mark item as Closed.

Users can perform the following functions with their items:

- 1) Display an item in Web Browser. Switches from the Item Explorer view to  
15 the Web Browser.
  - 2) Request an update of one or multiple items. This function sends a request to  
the Server Item Manager to retrieve the properties of all selected items. When  
the data structure of properties is received from the server, the data structure is  
validated. If the item is valid it is a) added to the users local item list if it does  
20 not exists or b) the existing item is updated. If the item is invalid a message is  
displayed explaining to the user why the item is invalid and cannot be added.
  - 3) Delete one or multiple items.
  - 4) Generate Shipping invoice. If the Client has won the auction for an item, the  
Item Manager can generate a shipping invoice with the following details. This  
25 invoice can be printed.
    - a) Item Description
    - b) Shipping company
    - c) Applicable Taxes
    - d) Shipping costs
-

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e) Total costs

f) Source

g) Destination

5) If applicable to the Auction Site:

5

a) Display an Item sellers feedback page

b) Submit feedback about an Items seller

c) Request an item sellers e-mail address

d) View the bidding history of an item

10

6) Perform a manual snipe. This sends a request to the **Server Item Manager** to place a bid on the selected item immediately.

#### Client Text and Video Chat

Users may enable their PC video camera and send pictures of themselves to other clients in the current chatroom. Users may enable the feature of having received chat text read back to them utilizing the Microsoft Agent™ technology.

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#### Rotating Banner Ads Window

All copies of software that have not been purchased or leased will display Banner advertisements while the software is executing.

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#### **Server Item Manager**

This application executes on the Bid Blaster™ Server 20 and performs the following functions:

25

1) Automatically deletes items from the **Items Table** where the auction has been closed for more than 48 hours.

2) Handles the following requests from a **Client Item Manager**:

a) Snipe configuration:

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This function sets the snipe properties of one or more items including the sniper's username, password, quantity, maximum bid, and Auction site ID#. This information is stored in the **Snipes Table** of a Bid Blaster™ database.

5           b) Retrieval and update of an items properties:

This function retrieves the HTML document containing the properties of an item. If the retrieval is successful, the document is parsed for relative properties of the item. If the item's properties are valid, the item is added and/or updated in the **Items Table** of a Bid Blaster™ Database. A data structure is filled out in memory and returned to the client application. If the item is invalid, an error and description is returned to the client.

3) Return GMT and GMT offset of all supported auction sites in order to synchronize the **Client Item Managers** internal auction site timekeepers.

15   **Member Authentication**

This application (see Fig. 2C) executes on the Bid Blaster™ Server 20 and performs the following function:

1) Authentication into the Bid Blaster™ System. Each time a **Client Item Manager** connects to the Internet, the users Serial code, Registration code, and Daily Key Code are sent via the internet to a **Server Member Manager** for authentication. The server will return a message stating whether the user has purchased or is leasing the software. If the user has not purchased or leased an authorization code their **Client Item Manager** will display rotating banner advertisements.

25

**Profile Manager**

See Fig. 2B. This is a ASP/HTML form on the Bid Blaster™ Application/Web Server 20 where a client can update his/her profile.

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**Automatic Sniping (Bidding) Manager**

This application (see Fig. 2E) executes on a Bid Blaster™ Server and performs the following functions:

- 5        1) Every 20 seconds, the Snipes Table is queried for all snipes where the auction will end within the next 30 seconds. These items are retrieved and stored in memory (duplicates are not added to memory).
- 2) The remaining time of each snipe in memory is calculated. If the snipes auction has expired, the snipe is removed from memory.
- 10       3) Every 2 seconds, the remaining time of each snipe in memory is calculated. If it ends within the next 10 seconds, the snipe (bid) is automatically placed and the snipe is deleted from memory and from the Snipes Table. Depending on connection speeds to various auction sites, the 10 second lead time may be increased or decreased, e.g. If a snipe is or was meant to be sent, but due to
- 15       server load it was missed, this program will increment the lead time by the seconds missed, and then slowly decrement depending on server load. The Interface displays all items that are about to be automatically bid on. There is an option to disable sniping.

- 20       Thus the invention automatically performs the functions of viewing bids, deciding on the next bid and inputting the bid. The customer who has acquired the Bid Blaster™ software accesses the Bid Blaster™ server through web site 16. The customer selects the auction site and identifies the item to be bid on. The customer provides the customer id/password for that site, item id, starting bid, maximum bid and bid increase
  - 25       type -- fixed amount or percentage. The customer selects either "sniper" mode or regular mode. In "sniper" mode the bid is placed in the last closing seconds of the auction. The invention polls, or "pings" the auction server to see what the response time is and the current high bid. If the current highest bid is within the customer's acceptable price range then Bid Blaster™ will fire off a bid in the last closing seconds of the
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5 auction. If not it does not submit a bid. In regular mode, Bid Blaster™ monitors the auction at various times, and if the current bid is within the customer's acceptable price range, it immediately submits a bid. If the current bid is greater than what the customer is willing to pay, an email is sent to the customer informing him that the maximum bid  
10 has been surpassed and asking if he wants to make further bids on the item. It provides a live feed back to the user indicating how many auctions or items have been won with the software and how many are online using it. It provides a "video chat" and "auto-update". It allows the customer to pick one of the shipping companies so the newly purchased product can be shipped automatically and immediately. A bid tracker lets  
15 customer track items of the type they are interested in purchasing. Bid Blaster™ allows user to enter any number of items that he wants placed up for auction through the use of one entry process. The timing feature adjusts the customer's clock to auction site clocks around the world.

Thus, the present invention permits the automatic management of placing  
15 of bids for the purchase of goods on Internet auction sites. It utilizes a high speed Internet Bid Blaster™ server 20. The Bid Blaster™ server 20 participates in bidding for goods at any given time, regardless of whether the customer is online or not during the critical last moments of the auction.

As will be apparent to those skilled in the art in the light of the foregoing  
20 disclosure, many alterations and modifications are possible in the practice of this invention without departing from the spirit or scope thereof. Accordingly, the scope of the invention is to be construed in accordance with the substance defined by the following claims.

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## WHAT IS CLAIMED IS:

1. A method of automatically managing on-line auctions comprising:
  - a) providing an auction management web site accessible to users on the Internet via a plurality of client computer terminals and comprising a secure server, said secure server being adapted to maintain a database, monitor auction web sites;
  - b) providing means for said user to provide to said auction management web site i) the target Internet auction site;
    - ii) the user's username and password for the target site;
    - iii) target item identification;
    - iv) user's maximum bid for said target item;
  - c) said auction management web site monitoring said target auction site to determine the response time of said target site and the current high bid for said target item;
  - d) if the current highest bid is within the customer's acceptable price range, periodically calculating the remaining time of the auction for the target item and determining the current highest bid;
  - e) if the remaining time of the auction for the target item ends within a predetermined period, placing a bid for the target item at a predetermined level above the current bid and equal to or less than said maximum bid.
2. The method of claim 1 wherein said step of periodically calculating the time remaining and current highest bid is carried out more frequently as the time remaining in the auction decreases.
3. The method of claim 1 comprising the further step of increasing or decreasing said predetermined period depending upon said response time.



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4. The method of claim 1 wherein the time for each auction site is synchronized to Greenwich mean time.
  5. The method of claim 1 wherein the remaining time of each target item auction is calculated, and if a target item auction ends within the next 10 seconds, a bid is automatically placed.
  6. A method of automatically managing on-line auctions comprising:
    - 10 a) providing an auction management web site accessible to users on the Internet via a plurality of client computer terminals and comprising a secure server, said secure server being adapted to maintain a database, monitor auction web sites;
    - b) providing means for said user to provide to said auction management web site i) a plurality of target Internet auction sites;
    - 15 ii) the user's username and password for each target site;
    - iii) target item identifications;
    - iv) user's maximum bid for each target item;
    - c) said auction management web site monitoring said target auction sites to determine the current high bid for each target item;
    - 20 d) if the current highest bid is within the customer's acceptable price range, placing a bid for the target item at a predetermined level above the current bid and equal to or less than said maximum bid.
-

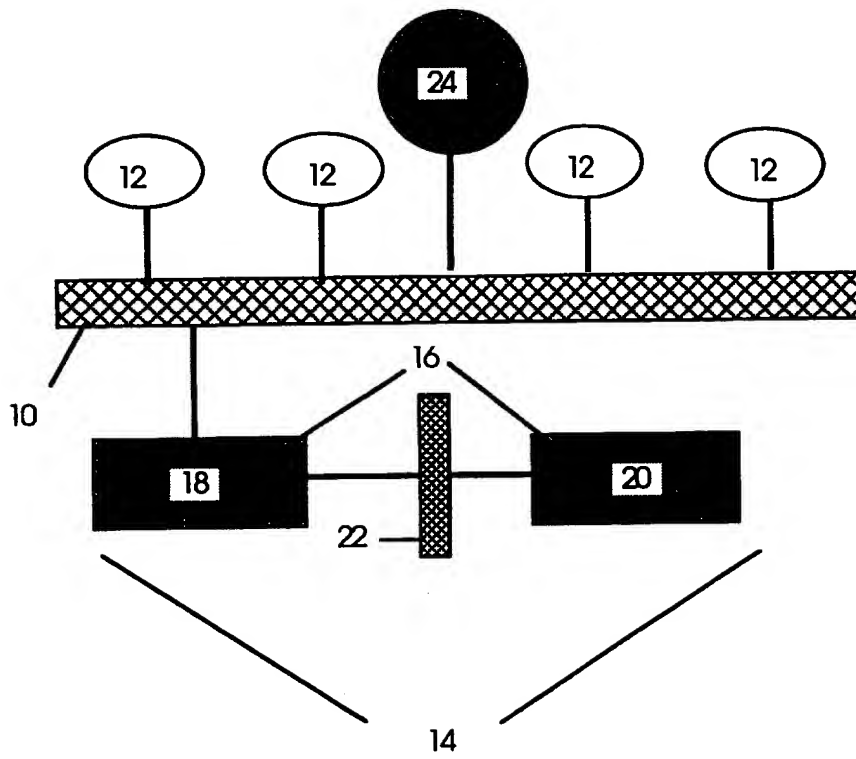


FIG. 1



# Client Profile Manager

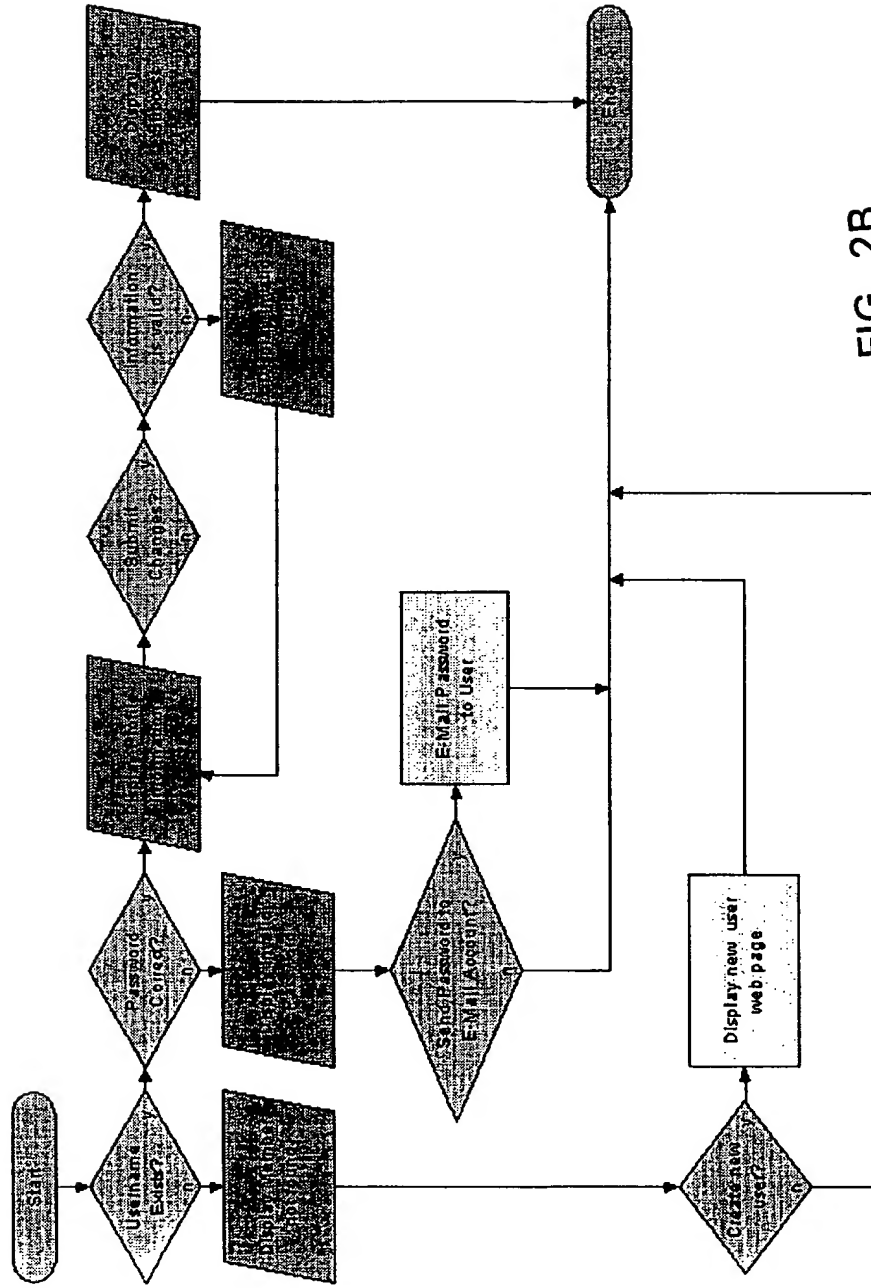


FIG. 2B

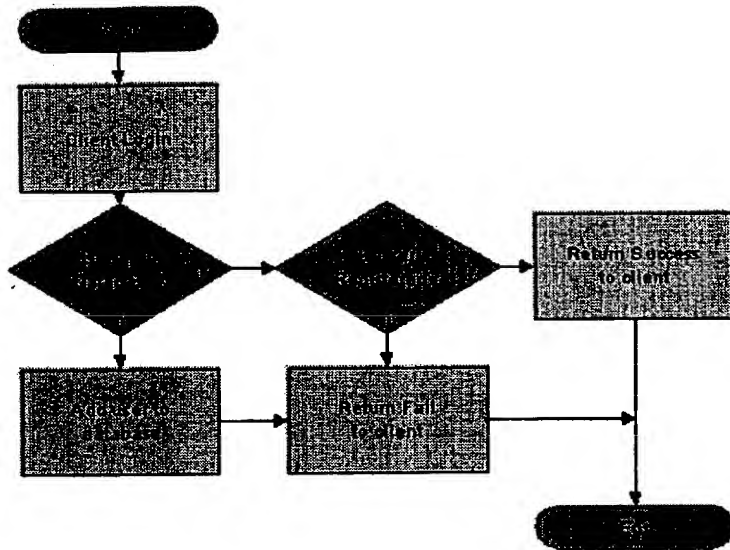
**Member Authentication**

FIG. 2C

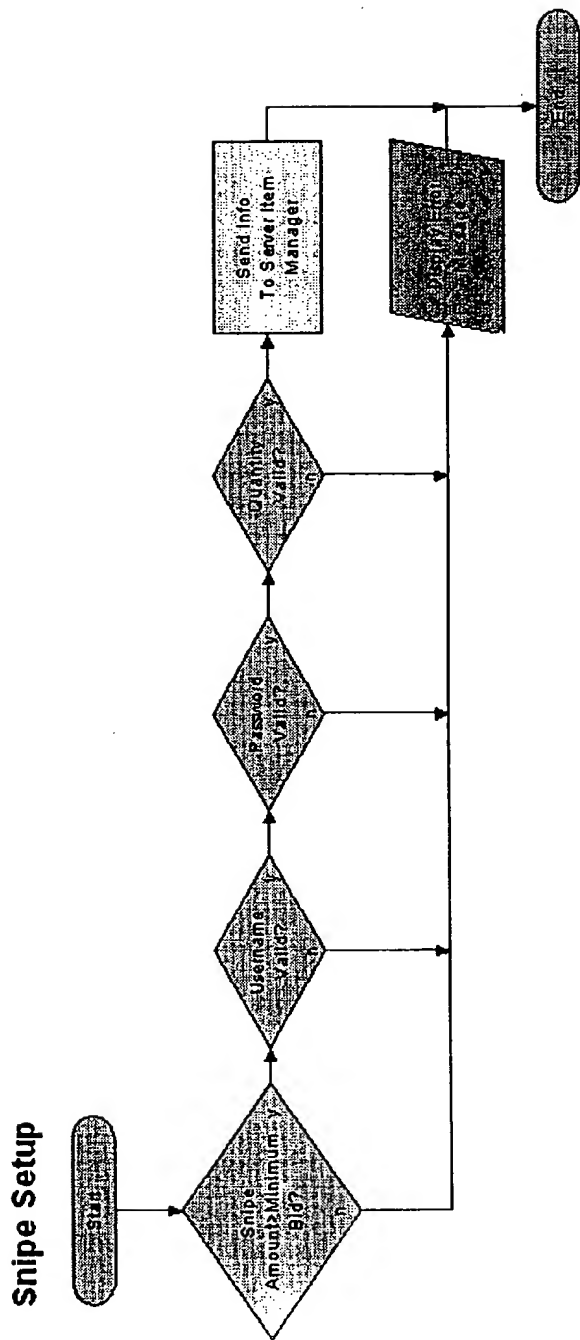


FIG. 2D

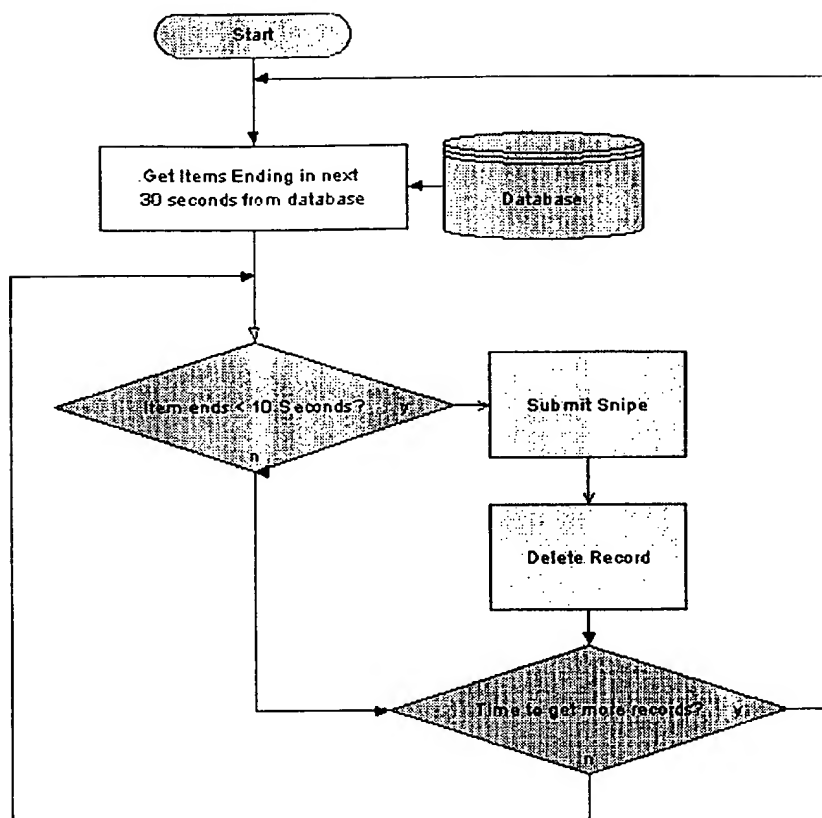
**Automatic Sniping**

FIG. 2E

# Automatic Sniping

